

SYSTEM AND SUPPORT ROD ASSEMBLY FOR SINTERING FIBER OPTIC SLEEVE TUBES

ABSTRACT OF DISCLOSURE

[0053] A system for sintering a quartz tube, such as a quartz fiber optic sleeve tube. The system comprises a furnace for heating the quartz tube to a temperature of at least 1400°C in a controlled atmosphere, a support rod assembly for the quartz tube, and means for positioning the quartz tube and a portion of the support rod assembly within the furnace. The support rod assembly includes a cylindrical support rod that straightens and supports the quartz tube and prevents tapering of the inner diameter due to creep, and at least one retaining portion coupled to at least one end of the cylindrical support rod for preventing slippage of the quartz tube from the support rod assembly. A mandrel assembly for fabricating a quartz fiber optic sleeve tube, a method of making a quartz fiber optic sleeve tube using the mandrel assembly, and a quartz fiber optic sleeve tube are also disclosed.